〈SMALL-SIGNAL TRANSISTOR〉

2SC4154

FOR LOW FREQUENCY AMPLIFY APPLICATION
SILICON NPN EPITAXIAL TYPE (Super mini type)

DESCRIPTION

2SC4154 is a super mini package resin sealed silicon NPN epitaxial transistor,
It is designed for low frequency voltage application.
Complementary with ISA1602AM1.

FEATURE

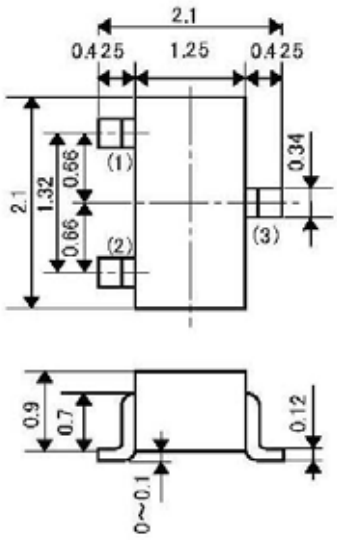
- Small collector to emitter saturation voltage.
  VCE(sat)=0.3V max (@Ic=100mA,IB=10mA)
- Excellent linearity of DC forward gain.
- Super mini package for easy mounting

APPLICATION

For Hybrid IC, small type machine low frequency voltage Amplify application.

OUTLINE DRAWING

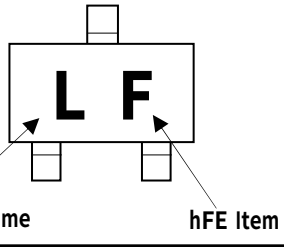
Unit:mm



TERMINAL CONNECTER
①:BASE
②:EMITTER
③:COLLECTOR

JEITA:SC-70
JEDEC: -

MARKING



MAXIMUM RATINGS (Ta=25°C)

Symbol	Parameter	Ratings	Unit
V_{CBO}	Collector to Base voltage	50	V
V_{CEO}	Collector to Emitter voltage	50	V
V_{EBO}	Emitter to Base voltage	6	V
I_O	Collector current	200	mA
P_c	Collector dissipation	200	mW
T_j	Junction temperature	+150	°C
T_{stg}	Storage temperature	-55～+150	°C

ELECTRICAL CHARACTERISTICS (Ta=25°C)

Parameter	Symbol	Test conditions	Limits			Unit
			Min	Typ	Max	
C to E break down voltage	$V(BR)_{CEO}$	I_C=100μA ,R_{BE}=∞	50	-	-	V
Collector cut off current	ICBO	V_{CB}=50V, I_E=0mA	-	-	0.1	μA
Emitter cut off current	IEBO	V_{EB}=6V, I_C=0mA	-	-	0.1	μA
DC forward current gain※	hFE	V_{CE}=6V, I_C=1mA	150	-	500	
DC forward current gain	hFE	V_{CE}=6V, I_C=0.1mA	90	-	-	
C to E Saturation Voltage	VCE(sat)	I_C=100mA ,I_B=10mA	-	-	0.3	V
Gain bandwidth product	fT	V_{CE}=6V, I_E=-10mA	-	200	-	MHz
Collector output capacitance	Cob	V_{CB}=6V, I_E=0,f=1MHz	-	2.5	-	pF
Noise figure	NF	V_{CE}=6V, I_E=-0.1mA,f=1kHz,RG=2kΩ	-	-	15	dB

※) It shows hFE classification at right table.

Item	E	F
hFE Item	150～300	250～500

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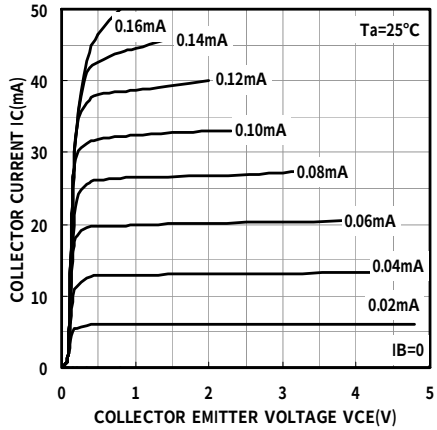
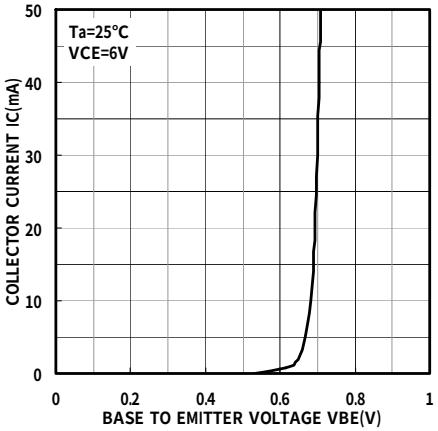
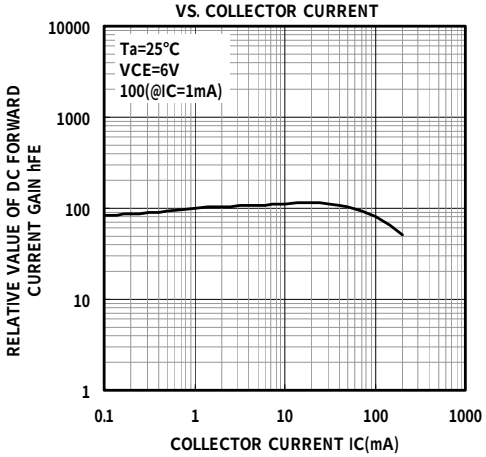
COMMON EMITTER OUTPUT



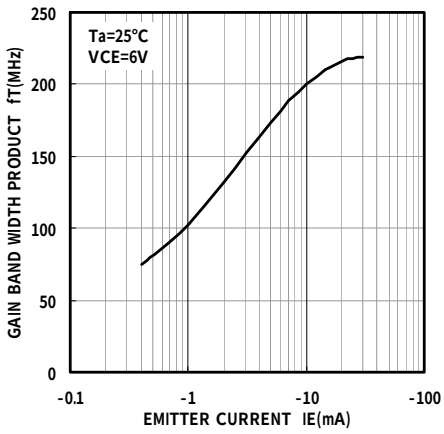
COMMON EMITTER TRANSFER



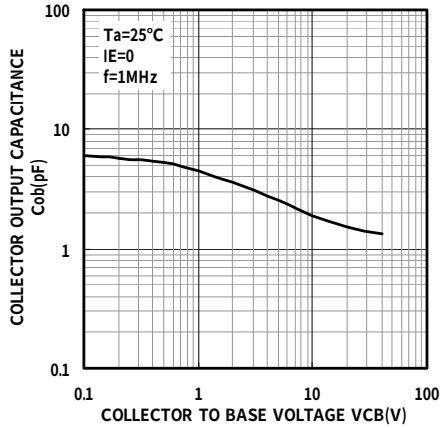
DC FORWARD CURRENT GAIN
VS. COLLECTOR CURRENT



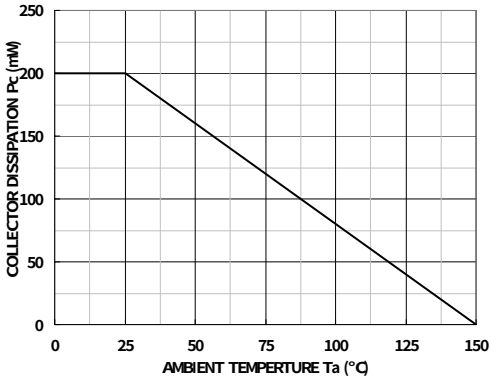
GAIN BAND WIDTH PRODUCT
VS. EMITTER CURRENT



COLLECTOR OUTPUT CAPACITANCE
VS. COLLECTOR TO BASE VOLTAGE



COLLECTOR DISSIPATION VS.AMBIENT TEMPERTURE



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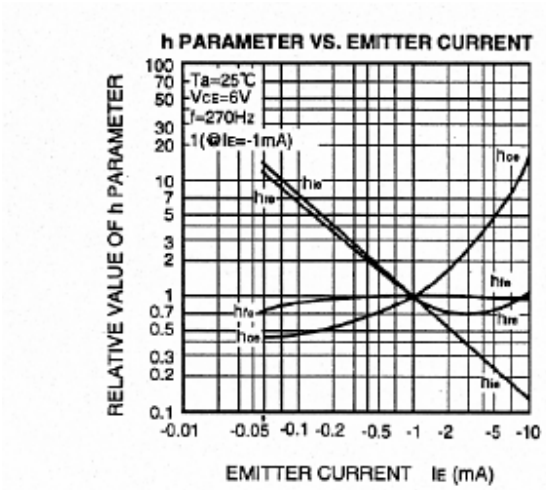

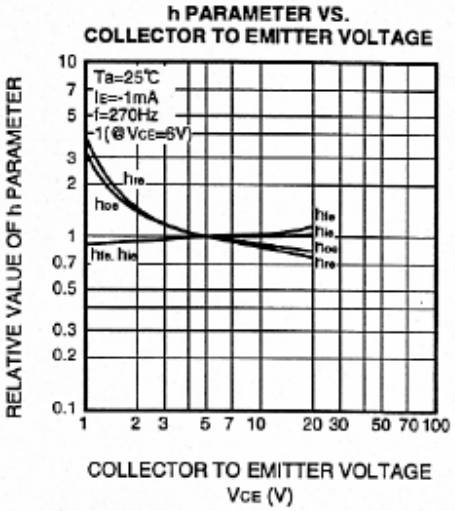

COMMON EMITTER h PARAMETER (TYPICAL VALUE)

Symbol	Parameter	Test conditions	Limits	Unit
h_{ie}	Closed loop small signal input impedance	Ta=25℃ VCE=6V IE=-1mA f=270Hz	8.5	kΩ
h_{re}	Open loop small signal reverse voltage amplification factor		0.1	$\times 10^{-3}$
h_{fe}	Closed loop small signal forward current amplification factor		300	—
h_{oe}	Open loop small signal output admittance		5.5	μS

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